

A13 Co-ordinate Geometry

Answers

O Level P2

- 1 (a)(i) $-\frac{4}{3}$ seen, isw or -1.33 or better
- (ii) $y = -\frac{4}{3}x + \frac{10}{3}$ or $4x + 3y = 10$ **OR** 3 term equivalent
OR $y = -\frac{4}{3}x + c$ and $c = \frac{10}{3}$ seen isw.
- After B0, allow B1 for straight line with gradient $-\frac{4}{3}$ or their (i)
OR B1 for 3 term straight line through (4, -2).
 $y = -1.33x + 3.32$ scores B1 B0 but allow B2 for $y = -1.33x + 3.33$
- (b)(i) (AB =) 5 (units)
- (ii) (BC =) 10 (units)
- (c) $AC^2 = 5^2 + 10^2 = AB^2 + BC^2$ seen o.e.
OR Gradient of BC = $\frac{6}{8}$ and $\frac{6}{8} \times \left(-\frac{4}{3}\right) = -1$ o.e.
- (d) 25 (units²) or $\frac{1}{2}$ (their (b)(i)) $\times$ (their (b)(ii)) $\checkmark$

B1 1

B2 2

B1

B1 2

B1 1

(B1)

B1✓ 1

7

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2	(a) (7 , 9) (b) (i) $y = 2x - 5$ (ii) Yes <u>and</u> $-9 = 2 \times -2 - 5$ (c) (i) (a) $(-5 , 0)$ (b) $\left(\frac{4p-15}{3}, p\right)$ (ii) $(5 , 7 \frac{1}{2})$	1 2 1ft 1 2 2	M1 for gradient $\frac{(15+21)}{(10+8)} (= 2)$ ft correct conclusion from their equation with the working shown M1 for line through (4 , 9) and (6 , 6) B1 for either x or y coordinate

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3	(a)	8.94	2	M1 for $\sqrt{(-1-3)^2 + (2-10)^2}$
	(b)	- 0.447	2	M1 for $\frac{4}{\sqrt{80}}$
	(c)	$x + 2y = 13$ oe correctly obtained	2	M1 for $(x - (1))^2 + (y - 2)^2 = (x - 3)^2 + (y - 10)^2$
	(d)	(- 1, 7)	1	

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4	(a)	$\frac{17x+13}{6}$ cao final answer	2	M1 for $\frac{2(4x-1)}{6} + \frac{3(3x+5)}{6}$ or better oe
	(b) (i)	$\frac{1}{2}$ or 0.5 cao	1	
	(ii)	$y = 1$ final answer	1	
	(iii)	Line from (6, 1) to (4, 3)	1	
	(iv)	$y = -x + 7$ final answer	2	B1 for any equation with grad -1 and/or intercept 7
	(v)	(0, 6)	2	B1 for line from (2, 2) with y-intercept between 5 and 7 soi Or for correct (unsimplified) equation ($y = -2x + 6$)

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5(a)	10.6[3...]	2	M1 for $\sqrt{(3 - -4)^2 + (5 - -3)^2}$ oe
5(b)	Gradient = $-\frac{1}{3}$ oe	M1	
	Substitutes pair of values into $y = \text{their}\left(-\frac{1}{3}\right)x + c$ to find c	M1	
	$y = -\frac{1}{3}x + \frac{1}{3}$ oe rearranged to $3y + x = 1$ AG	A1	
5(c)	$[y =] 3x + 9$	3	B1 for gradient = 3 soi M1 for substituting (-4, -3) into $y = \text{their } 3x + c$

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